

Claims:

1. The present invention relates to a process for isolating imperatorin, an anti-first-pass effective low molecular weight linear furanocoumarin from *Aegle marmelos* Correa fruits comprising the steps of:
 - a) extracting fresh/ dried powdered material of mature/immature pulp of *Aegle marmelos* Correa fruits directly with halogenated solvent at ambient temperature for 24 to 48 hrs. or with halogenated solvent or monohydric alcohol in a Soxhlett apparatus for 6 to 12hrs., wherein a ratio of the pulp to the solvent is 1:6;
 - b) concentrating the extracted alcoholic solvent up to 10 - 30% by volume of its original extract under vacuum;
 - c) partitioning the concentrated alcoholic extract with halogenated solvent to transfer imperatorin in the non-polar halogenated solvent;
 - d) drying the the extracted portion obtained directly or by partition over anhydrous sodium sulphate and evaporating the solvent;
 - e) crystallizing the concentrates obtained from step (d) with a solvent and filtering the crystals to obtain a filtrate;
 - f) concentrating the filtrate;
 - g) subjecting the concentrated filtrate of step (f) to silica gel vacuum liquid chromatography;
 - h) eluting imperatorin from the concentrated filtrate of step (g) in a pet-ether-ethyl acetate mixture;
 - i) identifying the eluted fractions enriched with phytosterols mixture;

- j) identifying the fraction containing the eluted imperatorin;
 - k) crystallizing the fractions containing imperatorin to obtain pure imperatorin.
2. A process as claimed in claim 1, wherein the plant parts of *Aegle marmelos* used for the extraction of imperatorin are selected from the mature/immature/ripe fruit pulp;
 3. A process as claimed in claim 1, wherein the halogenated solvent is selected from the group consisting of dichloromethane, carbon tetrachloride and ethylenedichloride;
 4. A process as claimed in claim 1, wherein the monohydric alcohol solvent is selected preferably either methanol or ethanol;
 5. A process as claimed in claim 1, wherein the imperatorin is crystallized from the solvent, wherein the solvent is selected from the group consisting of pet-ether, dichloromethane, acetone and methanol mixtures thereof;
 6. A process as claimed in claim 1, wherein the said isolation yields 0.75% to 3.12% imperatorin from mature fruits and 0.52% to 0.89% from immature fruits on dry weight basis;
 7. A process as claimed in claim 1, wherein a ratio of the concentrated extract of step (g) to silica gel (230-400 mesh) is in the range of 1:4 to 1:6;
 8. A process as claimed in claim 1, wherein the concentrated extract of step (g) subjected to vacuum liquid chromatography over silica gel eluting with the mixtures of pet-ether- ethyl acetate is in the range of 9:1 to 8.5:1.5 to get the fraction enriched with phytosterols mixture (0.04% to 0.17%);